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#### Concrete tests

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- Microplane Model for Brittle-Plastic Material: I.
  Theory, Zdeněk Bažant and Pere C. Prat, EM
  Oct. 88 p1672-1688.

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- Fracture Energy-Based Plasticity Formulation of Plain Concrete, Eddy Pramono and Kaspar Willam, EM June 89 pl 183-1204.
- Numerical Representation of Bodner Viscoplastic Constitutive Model, Faysal A. Kolkailah and Andrew J. McPhate, EM Feb. 89 p223-230.
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- Solidification Theory for Concrete Creep—I. Formulation, Zdeněk P. Bažant and Santosh Prasannan, EM Aug. 89 p1691-1703.
- Solidification Theory for Concrete Creep II. Verification and Application, Zdenek P. Bazant and Santosh Prasannan, EM Aug. 89 p1704-1725.

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#### -

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